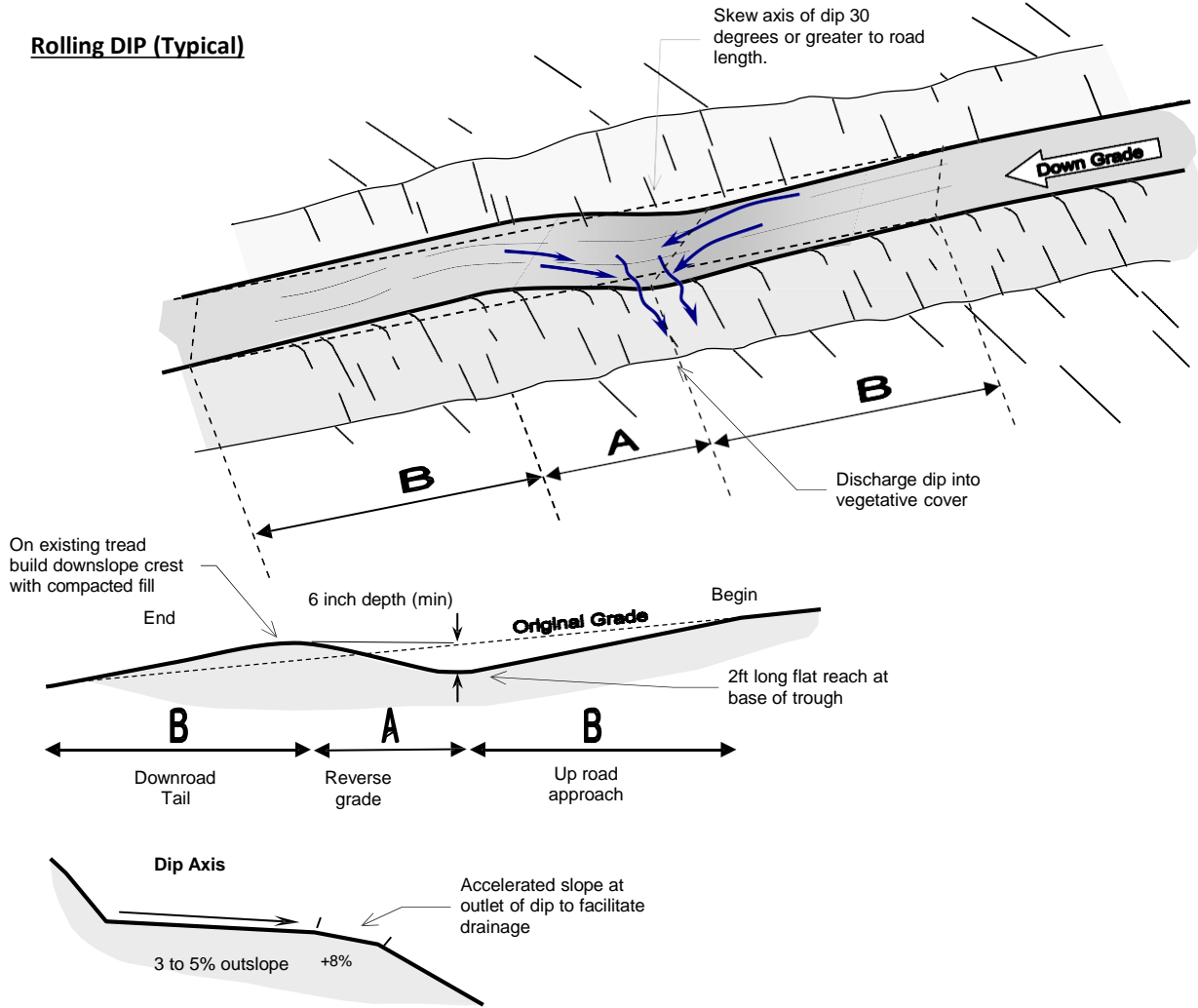


Rolling DIP (Typical)



ROAD GRADE (%)	TROUGH	A: REVERSE GRADE	B: UP ROAD APPROACH DOWN ROAD TAIL	
	Minimum depth below downslope crest	Minimum distance and grade from trough axis to downroad crest (ft)	Distance from up-road start of rolling dip to trough axis (ft)	Grade (%)
<5%	6 inches	15 feet at 5%	50	10%
10%			50	15%
15%			30	20%
>15%			7 feet at 10%	30

Rolling dip instructions:

- A rolling dip is a long, permanent dip constructed into native soils. The dip can be constructed to drain the inboard ditch or just the road surface.
- On existing roads the cut of the dip should start 30-50 feet upslope of the trough, with an outslope of 2-4%.
- Dip axis should be skewed down road at 30 degree off of centerline of road length – this will facilitate in efficiently draining the road without buildup of sediments in trough and makes the dip more drivable (i.e. the "roll" of the dip)
- The trough of the dip should be outsloped 3-5% with a flat reach of 2 feet.
- The reverse grade of the dip shall generally be sloped 5% for a minimum of 15 feet to form a minimum 6 inch deep dip. Road surface, where fill material will be placed, should be ripped first to ensure fill material interlocks with existing tread.
- The crest of the reverse grade should be a 2 foot long flat reach and the fill material should continue for a minimum of 30-50 feet before tapering to original grade.
- On roads steeper than 15% a steeper/shorter reverse-grade dip may be required.
- Dips shall be placed as specified in the plans. If not specified, then dips shall be placed at maximum 150-200 foot spacings.